PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	Docket No: Q91925
Jin-Soo KIM, et al.	
Appln. No.: 10/559,806	Group Art Unit: Unknown
Confirmation No.: 1556	Examiner: Unknown
Filed: December 8, 2005	

For: TRANSDUCIBLE DNA-BINDING PROTEINS

RESPONSE TO NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This response is in regard to the NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES, dated February 16, 2006, and the NOTIFICATION OF DEFECTIVE RESPONSE, dated February 23, 2006, issued in the above-referenced patent application.

In the Notification of Defective Response, the Examiner states that the content of the computer readable form does not comply with the requirements of 37 C.F.R. §§1.822 and/or 1.823 and that Applicant must provide a substitute computer readable form copy of the Sequence Listing and a statement.

Applicants enclose herewith a substitute Sequence Listing, in paper and a computer-readable form copy, that fully addresses the issues raised in the Raw Sequence Listing Error Report.

Applicants assert that this Response to the Notice to Comply and the enclosures are being timely filed, and that the enclosures bring the present application in full compliance with the requirements of 37 C.F.R. §§1.821-1.825.

Applicants respectfully request that the Examiner acknowledge that the substitute Sequence Listing meets the requirements of 37 C.F.R. §§1.821-1.825 and that the Examiner enter the substitute Sequence Listing.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

John T. Callahan
Registration No. 32,607

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: April 14, 2006

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
10/559,806	Jin-Soo Kim	Q91925

INTERNATIONAL APPLICATION NO.	
PCT/KR04/01385	
I.A. FILING DATE	PRIORITY DATE
06/10/2004	06/10/2003

23373
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

CONFIRMATION NO. 1556
371 FORMALITIES LETTER

OC000000018012492

Date Mailed: 02/16/2006

NOTIFICATION TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant is given **TWO MONTHS FROM THE DATE OF THIS NOTICE** within which to file the items indicated below to avoid abandonment. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 CFR 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing." Applicant must provide a substitute computer readable form (CRF) copy of the "Sequence Listing" and a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d).

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:

- **For Rules Interpretation, call (571) 272-0951**
- **For Patentin Software Program Help, call Patent EBC at 1-866-217-9197 or directly at 703-305-3028 / 703-308-6845 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.**
- **Send e-mail correspondence for Patentin Software Program Help @ ebc@uspto.gov**

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

PATRICIA A BOOKER

Telephone: (703) 308-9140 EXT 204

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/559,806	PCT/KR04/01385	Q91925

FORM PCT/DO/EO/922 (371 Formalities Notice)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
10/559,806	Jin-Soo Kim	Q91925

INTERNATIONAL APPLICATION NO.	
PCT/KR04/01385	
I.A. FILING DATE	PRIORITY DATE
06/10/2004	06/10/2003

23373
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

CONFIRMATION NO. 1556

371 FORMALITIES LETTER

OC000000018100307

Date Mailed: 02/23/2006

NOTIFICATION OF DEFECTIVE RESPONSE

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495)

- Indication of Small Entity Status
- Priority Document
- Copy of the International Application filed on 12/08/2005
- Copy of the International Search Report filed on 12/08/2005
- Copy of IPE Report filed on 12/08/2005
- Information Disclosure Statements filed on 12/08/2005
- Biochemical Sequence Diskette filed on 12/08/2005
- Oath or Declaration filed on 12/08/2005
- Biochemical Sequence Listing filed on 12/08/2005
- Small Entity Statement filed on 12/08/2005
- Request for Immediate Examination filed on 12/08/2005
- U.S. Basic National Fees filed on 12/08/2005
- Assignment filed on 12/08/2005
- Priority Documents filed on 12/08/2005
- Specification filed on 12/08/2005
- Claims filed on 12/08/2005
- Abstracts filed on 12/08/2005
- Drawings filed on 12/08/2005
- Paper nucleotide sequence listings filed on 12/08/2005

Applicant's response filed 12/08/2005 is hereby acknowledged. The following requirements set forth in the NOTIFICATION of MISSING REQUIREMENTS mailed 02/16/2006 have not been completed.

- A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 CFR 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing." Applicant must provide a substitute computer readable form (CRF) copy of the "Sequence Listing" and a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper

or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d).

Applicant is required to complete the response within a time limit of ONE MONTH from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:

- **For Rules Interpretation, call (571) 272-0951**
- **For Patentin Software Program Help, call Patent EBC at 1-866-217-9197 or directly at 703-305-3028 / 703-308-6845 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.**
- **Send e-mail correspondence for Patentin Software Program Help @ ebc@uspto.gov**

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

PATRICIA A BOOKER

Telephone: (703) 308-9140 EXT 204

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/559,806	PCT/KR04/01385	Q91925

FORM PCT/DO/EO/916 (371 Formalities Notice)

STIC Biotechnology Systems Branch

RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/559,806
Source: IFW
Date Processed by STIC: 12/16/05

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:
1) **INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
2) **TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.2.2 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.
Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.
Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<http://www.uspto.gov/ebc/efs/downloads/documents.htm> , **EFS Submission User Manual** - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05): U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street. Alexandria, VA 22314

Revised 01/24/05

Raw Sequence Listing Error Summary

ERROR DETECTED | **SUGGESTED CORRECTION** | SERIAL NUMBER: 10/559,806

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

1____ Wrapped Nucleics / Wrapped Aminos — The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."

2____ Invalid Line Length — The rules require that a line not exceed 72 characters in length. This includes white spaces.

3____ Misaligned Amino Numbering — The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.

4____ Non-ASCII — The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. **Please ensure your subsequent submission is saved in ASCII text.**

5____ Variable Length — Sequence(s)____ contain n's or Xaa's representing more than one residue. **Per Sequence Rules, each n or Xaa can only represent a single residue.** Please present the **maximum** number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.

6____ PatentIn 2.0 "bug" — A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. **This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.**

7____ Skipped Sequences (OLD RULES) — Sequence(s) ____ missing. If intentional, please insert the following lines for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
This sequence is intentionally skipped

Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.

8____ Skipped Sequences (NEW RULES) — Sequence(s) ____ missing. If intentional, please insert the following lines for each skipped sequence.
<210> sequence id number
<400> sequence id number
000

9____ Use of n's or Xaa's (NEW RULES) — Use of n's and/or Xaa's have been detected in the Sequence Listing.
Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.

10____ Invalid <213> Response — Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence.

11____ Use of <220> — Sequence(s) ____ missing the <220> "Feature" and associated numeric identifiers and responses.
Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)

12____ PatentIn 2.0 "bug" — Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.

13____ Misuse of n/Xaa — "n" can only represent a single nucleotide; "Xaa" can only represent a single amino acid

IFWP

RAW SEQUENCE LISTING DATE: 12/16/2005
PATENT APPLICATION: US/10/559,806 TIME: 15:04:30

Input Set : A:\Q91925 sequence listing.txt
Output Set: N:\CRF4\12162005\J559806.raw

3 <110> APPLICANT: TOOLGEN, INC, et al.
5 <120> TITLE OF INVENTION: Transducible DNA-Binding Proteins
7 <130> FILE REFERENCE: Q91925
C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/559,806
C--> 9 <141> CURRENT FILING DATE: 2005-12-08
9 <150> PRIOR APPLICATION NUMBER: US 60/477,459
10 <151> PRIOR FILING DATE: 2003-06-10
12 <160> NUMBER OF SEQ ID NOS: 72
14 <170> SOFTWARE: PatentIn version 3.2

ERRORED SEQUENCES

1131 <210> SEQ ID NO: 72
1132 <211> LENGTH: 11
1133 <212> TYPE: PRT
1134 <213> ORGANISM: Synthetic
1136 <400> SEQUENCE: 72
1138 Tyr Ala Arg Ala Ala Ala Arg Gln Ala Arg Ala
1139 1 5 10
E--> 1142 30
E--> 1144 1

invalid <213> response. Does Not Comply. Corrected Diskette Needed.
(see item 10on Error Summary Sheet) → This error appears in other sequences, too.

delete

see p. 2

<210> 5
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> coordinating residue

insufficient explanation - give source of genetic material (see item 11 on Error Summary Sheet)

VERIFICATION SUMMARY DATE: 12/16/2005
PATENT APPLICATION: US/10/559,806 TIME: 15:04:31

Input Set : A:\Q91925 sequence listing.txt
Output Set: N:\CRF4\12162005\J559806.raw

L:9 M:270 C: Current Application Number differs, Replaced Current Application No
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:89 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:91 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:16
L:117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:119 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:16
L:415 M:283 W: Missing Blank Line separator, <400> field identifier
L:553 M:283 W: Missing Blank Line separator, <400> field identifier
L:691 M:283 W: Missing Blank Line separator, <400> field identifier
L:829 M:283 W: Missing Blank Line separator, <400> field identifier
L:967 M:283 W: Missing Blank Line separator, <400> field identifier
L:1142 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:72
L:1144 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:72

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket No: Q91925

In re patent application of

KIM, JIN-SOO *et al.*

Serial No. 10/559,806

Filed: December 8, 2005

For: TRANSDUCIBLE DNA-BINDING PROTEINS

STATEMENT TO SUPPORT FILING AND SUBMISSION IN ACCORDANCE WITH 37 C.F.R. §§ 1.821-1.825

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Mail Stop SEQUENCE

Sir:

In connection with a Sequence Listing submitted concurrently herewith, the undersigned hereby states that:

1. the submission, filed herewith in accordance with 37 C.F.R. § 1.821(g), does not include new matter;

2. the content of the attached paper copy and the attached computer readable copy of the Sequence Listing, submitted in accordance with 37 C.F.R. § 1.821(c) and (e), respectively, are the same.

Respectfully submitted,

April 12, 2006
Date

James A. Coburn

HARBOR CONSULTING IP SERVICES, INC.
1500A Lafayette Road, #262
Portsmouth, N.H. 03801
800-318-3021

SEQUENCE LISTING

<110> KIM, JIN-SOO
SHIN, HYUN-CHUL
KWON, HEUNG-SUN

<120> TRANSDUCIBLE DNA-BINDING PROTEINS

<130> Q91925

<140> 10/559,806
<141> 2005-12-08

<150> PCT/KR04/01385
<151> 2004-06-10

<150> 60/477,459
<151> 2003-06-10

<160> 72

<170> PatentIn version 3.3

<210> 1
<211> 11
<212> PRT
<213> Human immunodeficiency virus

<400> 1
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10

<210> 2
<211> 16
<212> PRT
<213> Drosophila melanogaster

<400> 2
Ala Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys Glu Asn
1 5 10 15

<210> 3
<211> 34
<212> PRT
<213> Herpes simplex virus

<400> 3
Asp Ala Ala Thr Ala Thr Arg Gly Arg Ser Ala Ala Ser Arg Pro Thr
1 5 10 15

Glu Arg Pro Arg Ala Pro Ala Arg Ser Ala Ser Arg Pro Arg Arg Pro
20 25 30

Val Glu

<210> 4
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 4
Thr Ser Pro Leu Asn Ile His Asn Gly Gln Lys Leu
1 5 10

<210> 5
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<221> MOD_RES
<222> (2)..(6)
<223> region may encompass a range of 2-5 variable amino acids

<220>
<221> MOD_RES
<222> (8)..(10)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (11)
<223> Phe or Tyr

<220>
<221> MOD_RES
<222> (12)..(16)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (17)
<223> hydrophobic residue

<220>
<221> MOD_RES
<222> (18)..(19)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (21)..(25)
<223> region may encompass a range of 3-5 variable amino acids

<400> 5
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15

Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 6
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<221> MOD_RES
<222> (2)..(6)
<223> region may encompass a range of 2-5 variable amino
      acids

<220>
<221> MOD_RES
<222> (8)..(10)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (11)
<223> variable amino acid, frequently aromatic

<220>
<221> MOD_RES
<222> (12)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (14)
<223> variable amino acid

<220>
<221> MOD_RES
<222> (17)
<223> variable amino acid, frequently hydrophobic

<220>
<221> MOD_RES
<222> (18)
<223> variable amino acid

<220>
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<222> (21)..(25)
<223> region may encompass a range of 3-5 variable amino acids

<400> 6
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Glu
1 5 10 15

Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
20 25

<210> 7
<211> 260
<212> PRT
<213> Homo sapiens

<400> 7
Tyr Leu Pro Asp Thr Asp Asp Arg His Arg Ile Glu Glu Lys Arg Lys
1 5 10 15

Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met Lys Lys Ser Pro Phe Ser
20 25 30

Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg Arg Ile Ala Val Pro Ser
35 40 45

Arg Ser Ser Ala Ser Val Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe
50 55 60

Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp Glu Phe Pro Thr Met Val
65 70 75 80

Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro
85 90 95

Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Pro Ala Met
100 105 110

Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val Pro Val Leu Ala Pro
115 120 125

Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala
130 135 140

Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp
145 150 155 160

Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr Asp Pro Ala Val Phe
165 170 175

Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn
180 185 190

Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu Pro Met Leu Met Glu
195 200 205

Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Ala Gln Arg Pro Pro Asp
210 215 220

Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu
225 230 235 240

Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala Asp Met Asp Phe Ser Ala
245 250 255

Leu Leu Ser Gln
260

<210> 8
<211> 127
<212> PRT
<213> Saccharomyces cerevisiae

<400> 8
Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu Ser Phe Thr
1 5 10 15

Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr Gln Thr Asn
20 25 30

Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val His Asp Asn
35 40 45

Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn
50 55 60

Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala
65 70 75 80

Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met Asp Asp Val
85 90 95

Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys
100 105 110

Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser
115 120 125

<210> 9
<211> 90
<212> PRT
<213> Saccharomyces cerevisiae

<400> 9
Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp Leu Gly Thr Ala
1 5 10 15

Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr Arg Thr His Asp
20 25 30

Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr Asn Ala Leu Gly
35 40 45

Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro Ser Lys Gly Val
50 55 60

Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu Gln Gln Pro Ile
65 70 75 80

Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
85 90

<210> 10
<211> 63
<212> PRT
<213> Homo sapiens

<400> 10
Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu
1 5 10 15

Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met
20 25 30

Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr
35 40 45

Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp
50 55 60

<210> 11
<211> 96
<212> PRT
<213> Homo sapiens

<400> 11
Asp Ala Lys Ser Leu Thr Ala Trp Ser Arg Thr Leu Val Thr Phe Lys
1 5 10 15

Asp Val Phe Val Asp Phe Thr Arg Glu Glu Trp Lys Leu Leu Asp Thr
20 25 30

Ala Gln Gln Ile Val Tyr Arg Asn Val Met Leu Glu Asn Tyr Lys Asn
35 40 45

Leu Val Ser Leu Gly Tyr Gln Leu Thr Lys Pro Asp Val Ile Leu Arg
50 55 60

Leu Glu Lys Gly Glu Glu Pro Trp Leu Val Glu Arg Glu Ile His Gln
65 70 75 80

Glu Thr His Pro Asp Ser Glu Thr Ala Phe Glu Ile Lys Ser Ser Val
85 90 95

<210> 12
<211> 23
<212> PRT
<213> Homo sapiens

<400> 12
Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
1 5 10 15

Arg Arg His Gly Arg Thr His
20

<210> 13
<211> 23
<212> PRT
<213> Homo sapiens

<400> 13
Tyr Gln Cys Asn Ile Cys Gly Lys Cys Phe Ser Cys Asn Ser Asn Leu
1 5 10 15

His Arg His Gln Arg Thr His
20

<210> 14
<211> 23
<212> PRT
<213> Homo sapiens

<400> 14
Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys
1 5 10 15

Arg Arg His Cys Ile Leu His
20

<210> 15
<211> 23
<212> PRT
<213> Homo sapiens

<400> 15
Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu
1 5 10 15

Asn Arg His Arg Arg Thr His
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<210> 16
<211> 23
<212> PRT
<213> Homo sapiens

<400> 16
Tyr Lys Cys Lys Glu Cys Gly Lys Ala Phe Asn His Ser Ser Asn Phe
1 5 10 15

Asn Lys His His Arg Ile His
20

<210> 17
<211> 23
<212> PRT
<213> Homo sapiens

<400> 17
Phe Lys Cys Pro Val Cys Gly Lys Ala Phe Arg His Ser Ser Ser Leu
1 5 10 15

Val Arg His Gln Arg Thr His
20

<210> 18
<211> 24
<212> PRT
<213> Homo sapiens

<400> 18
Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Ile Ser Ser Asn Leu
1 5 10 15

Gln Arg His Val Arg Asn Ile His
20

<210> 19
<211> 23
<212> PRT
<213> Homo sapiens

<400> 19
Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Ile Gly Ser Asn Leu
1 5 10 15

Asn Val His Arg Arg Ile His
20

<210> 20
<211> 23
<212> PRT
<213> Homo sapiens

<400> 20
Tyr Gly Cys His Leu Cys Gly Lys Ala Phe Ser Lys Ser Ser Asn Leu
1 5 10 15

Arg Arg His Glu Met Ile His
20

<210> 21
<211> 23
<212> PRT
<213> Homo sapiens
<400> 21
Tyr Lys Cys Lys Glu Cys Gly Gln Ala Phe Arg Gln Arg Ala His Leu
1 5 10 15

Ile Arg His His Lys Leu His
20

<210> 22
<211> 23
<212> PRT
<213> Homo sapiens

<400> 22
Tyr Lys Cys His Gln Cys Gly Lys Ala Phe Ile Gln Ser Phe Asn Leu
1 5 10 15

Arg Arg His Glu Arg Thr His
20

<210> 23
<211> 23
<212> PRT
<213> Homo sapiens

<400> 23
Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
1 5 10 15

Leu Arg His Ile Lys Leu His
20

<210> 24
<211> 23
<212> PRT
<213> Homo sapiens

<400> 24
Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Ser Ser His Leu
1 5 10 15

Arg Arg His Glu Lys Thr His
20

<210> 25
<211> 23
<212> PRT
<213> Homo sapiens

<400> 25
Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
1 5 10 15

Thr Arg His Gln Lys Ile His
20

<210> 26
<211> 23
<212> PRT
<213> Homo sapiens

<400> 26
Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Cys Ser His Leu
1 5 10 15

Arg Arg His Glu Lys Thr His
20

<210> 27
<211> 23
<212> PRT
<213> Homo sapiens

<400> 27
Tyr Ala Cys His Leu Cys Ala Lys Ala Phe Ile Gln Cys Ser His Leu
1 5 10 15

Arg Arg His Glu Lys Thr His
20

<210> 28
<211> 23
<212> PRT
<213> Homo sapiens

<400> 28
Tyr Val Cys Arg Glu Cys Gly Arg Gly Phe Arg Gln His Ser His Leu
1 5 10 15

Val Arg His Lys Arg Thr His
20

<210> 29
<211> 23
<212> PRT
<213> Homo sapiens

<400> 29
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15

Thr Thr His Lys Ile Ile His
20

<210> 30
<211> 23
<212> PRT
<213> Homo sapiens

<400> 30
Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
1 5 10 15

Asn Val His Lys Arg Thr His
20

<210> 31
<211> 23
<212> PRT
<213> Homo sapiens
<400> 31
Tyr Met Cys Ser Glu Cys Gly Arg Gly Phe Ser Gln Lys Ser Asn Leu
1 5 10 15

Ile Ile His Gln Arg Thr His
20

<210> 32
<211> 23
<212> PRT
<213> Homo sapiens

<400> 32
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
1 5 10 15

Thr Lys His Lys Lys Ile His
20

<210> 33
<211> 23
<212> PRT
<213> Homo sapiens

<400> 33
Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 34
<211> 23
<212> PRT
<213> Homo sapiens

<400> 34
Tyr Val Cys Arg Glu Cys Arg Arg Gly Phe Ser Gln Lys Ser Asn Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 35
<211> 23
<212> PRT
<213> Homo sapiens

<400> 35
Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1 5 10 15

Thr Arg His Lys Lys Ser His
20

<210> 36
<211> 23
<212> PRT
<213> Homo sapiens

<400> 36
Tyr Glu Cys Asn Thr Cys Arg Lys Thr Phe Ser Gln Lys Ser Asn Leu
1 5 10 15

Ile Val His Gln Arg Thr His
20

<210> 37
<211> 23
<212> PRT
<213> Homo sapiens

<400> 37
Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
1 5 10 15

Thr Val His Gln Lys Ile His
20

<210> 38
<211> 23
<212> PRT
<213> Homo sapiens

<400> 38
Tyr Lys Cys Asp Glu Cys Gly Lys Asn Phe Thr Gln Ser Ser Asn Leu
1 5 10 15

Ile Val His Lys Arg Ile His
20

<210> 39
<211> 23
<212> PRT
<213> Homo sapiens

<400> 39
Tyr Glu Cys Asp Val Cys Gly Lys Thr Phe Thr Gln Lys Ser Asn Leu
1 5 10 15

Gly Val His Gln Arg Thr His
20

<210> 40
<211> 23
<212> PRT
<213> Homo sapiens

<400> 40
Tyr Glu Cys Val Gln Cys Gly Lys Gly Phe Thr Gln Ser Ser Asn Leu
1 5 10 15

Ile Thr His Gln Arg Val His
20

<210> 41
<211> 23
<212> PRT
<213> Homo sapiens
<400> 41
Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 42
<211> 23
<212> PRT
<213> Homo sapiens

<400> 42
Tyr Glu Cys Gln Asp Cys Gly Arg Ala Phe Asn Gln Asn Ser Ser Leu
1 5 10 15

Gly Arg His Lys Arg Thr His
20

<210> 43
<211> 23
<212> PRT
<213> Homo sapiens

<400> 43
Tyr Glu Cys Asn Glu Cys Gly Lys Phe Phe Ser Gln Ser Ser Ser Leu
1 5 10 15

Ile Arg His Arg Arg Ser His
20

<210> 44
<211> 23
<212> PRT
<213> Homo sapiens

<400> 44
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu
1 5 10 15

Thr Arg His Lys Ile Val His
20

<210> 45
<211> 23
<212> PRT
<213> Homo sapiens

<400> 45
Tyr Glu Cys Asn Glu Cys Gly Lys Ala Phe Ala Gln Asn Ser Thr Leu
1 5 10 15

Arg Val His Gln Arg Ile His
20

<210> 46
<211> 23
<212> PRT
<213> Homo sapiens

<400> 46
Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15

Thr Gln His Arg Arg Ile His
20

<210> 47
<211> 23
<212> PRT
<213> Homo sapiens

<400> 47
Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15

Thr Arg His Arg Arg Ile His
20

<210> 48
<211> 23
<212> PRT
<213> Homo sapiens

<400> 48
His Lys Cys Leu Glu Cys Gly Lys Cys Phe Ser Gln Asn Thr His Leu
1 5 10 15

Thr Arg His Gln Arg Thr His
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<210> 49
<211> 25
<212> PRT
<213> Homo sapiens

<400> 49
Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His
20 25

<210> 50
<211> 25
<212> PRT
<213> Homo sapiens

<400> 50
Tyr His Cys Asp Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Thr Arg His Tyr Arg Lys His
20 25

<210> 51
<211> 25
<212> PRT
<213> Homo sapiens
<400> 51
Tyr Arg Cys Ser Trp Glu Gly Cys Glu Trp Arg Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Thr Arg His Phe Arg Lys His
20 25

<210> 52
<211> 25
<212> PRT
<213> Homo sapiens

<400> 52
Phe Ser Cys Ser Trp Lys Gly Cys Glu Arg Arg Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Ser Arg His Arg Arg Thr His
20 25

<210> 53
<211> 25
<212> PRT
<213> Homo sapiens

<400> 53
Phe Ala Cys Ser Trp Gln Asp Cys Asn Lys Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Ala Arg His Tyr Arg Thr His
20 25

<210> 54
<211> 25
<212> PRT
<213> Homo sapiens

<400> 54
Tyr His Cys Asn Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Glu Leu Thr Arg His Tyr Arg Lys His
20 25

<210> 55
<211> 24
<212> PRT
<213> Homo sapiens

<400> 55
Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu
1 5 10 15

Thr Arg His Met Lys Lys Ser His
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<210> 56
<211> 23
<212> PRT
<213> Homo sapiens

<400> 56
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
1 5 10 15

Lys Thr His Thr Arg Thr His
20

<210> 57
<211> 23
<212> PRT
<213> Homo sapiens

<400> 57
Phe Ala Cys Glu Val Cys Gly Val Arg Phe Thr Arg Asn Asp Lys Leu
1 5 10 15

Lys Ile His Met Arg Lys His
20

<210> 58
<211> 25
<212> PRT
<213> Homo sapiens

<400> 58
Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15

Lys Leu Asn Arg His Lys Lys Arg His
20 25

<210> 59
<211> 23
<212> PRT
<213> Homo sapiens

<400> 59
Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15

Thr Arg His Gln Arg Ile His
20

<210> 60
<211> 23
<212> PRT
<213> Homo sapiens

<400> 60
Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
1 5 10 15

Ile Arg His Gln Arg Thr His
20

<210> 61
<211> 23
<212> PRT
<213> Homo sapiens
<400> 61
Tyr Leu Cys Ser Glu Cys Asp Lys Cys Phe Ser Arg Ser Thr Asn Leu
1 5 10 15

Ile Arg His Arg Arg Thr His
20

<210> 62
<211> 23
<212> PRT
<213> Homo sapiens

<400> 62
Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Ser Ser Gly Ser Asn Phe
1 5 10 15

Thr Arg His Gln Arg Ile His
20

<210> 63
<211> 23
<212> PRT
<213> Homo sapiens

<400> 63
Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu
1 5 10 15

Asn Val His Arg Arg Ile His
20

<210> 64
<211> 23
<212> PRT
<213> Homo sapiens

<400> 64
Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu
1 5 10 15

Arg Arg His Glu Thr Thr His
20

<210> 65
<211> 23
<212> PRT
<213> Homo sapiens

<400> 65
Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15

Ile Arg His Gln Arg Ile His
20

<210> 66
<211> 23
<212> PRT
<213> Homo sapiens

<400> 66
Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu
1 5 10 15

Thr Arg His Lys Arg Ile His
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<210> 67
<211> 83
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 67
Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr
65 70 75 80

Gly Glu Lys

<210> 68
<211> 83
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 68
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
65 70 75 80

Gly Glu Lys

<210> 69
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 69
Tyr Ala Arg Lys Ala Arg Arg Gln Ala Arg Arg
1 5 10

<210> 70
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 70
Tyr Ala Arg Ala Ala Arg Arg Ala Ala Arg Arg
1 5 10

<210> 71
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 71
Tyr Ala Arg Ala Ala Arg Arg Ala Ala Arg Ala
1 5 10

<210> 72
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 72
Tyr Ala Arg Ala Ala Ala Arg Gln Ala Arg Ala
1 5 10